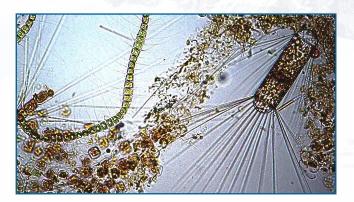




# **FjordPhyto**



#### **Background**

Phytoplankton are microscopic, plant-like creatures that live in the ocean and use sunlight as well as nutrients to produce energy via photosynthesis. They are the foundation of the food web, providing a food resource for everything from microscopic, animal-like zooplankton to seals, penguins and multi-ton whales. They play a critical role in the global carbon cycle, drawing carbon dioxide out of the atmosphere and into the deep ocean. Phytoplankton also contribute to over half of the Earth's oxygen - more than all the trees and plants on land combined! Over the past 40 years, the Antarctic Peninsula has experienced some of the fastest warming rates on the planet. Warming temperatures cause ice and glaciers to melt, and this melted fresh water drains into the fjords, changing the ocean chemistry and potentially the phytoplankton community. FjordPhyto www.fjordphyto.org is a Citizen Science project relying on data collected by Antarctic travellers as they visit various fjords along the Antarctic Peninsula throughout the austral summer. By collecting phytoplankton throughout the entire summer season, citizen scientists can help researchers understand how melted glacial water can influence and change the population of phytoplankton in fjords and what impact this might have on the polar coastal ecosystem.

## How can you/guests participate?

FjordPhyto is a fantastic project to engage guests in the hands-on scientific sampling process to collect phytoplankton from fjords along the Antarctic Peninsula using some of the same techniques as oceanographers. Sampling takes approximately one hour and can be done as part of a Zodiac cruise or landing stop. There is a master list of GPS coordinates for multiple fjords of interest.

The project should be led by an expedition staff member, who will help guests record data and collect phytoplankton. The leading expedition staff member is responsible for making sure samples are labelled and stored properly as well as data sheets are filled in correctly. Recorded data should be scanned and sent via email to FjordPhyto Lead scientist Allison Cusick (see contact info below). Physical sample transfer back to the USA will be coordinated between Allison and the leading expedition staff member.



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#### Training and equipment required

FjordPhyto requires a few hours (2-3) of pre-season training to become familiar with the equipment and sampling methods. The leading expedition staff member is asked to schedule a call with Allison. In-person training with Allison or an expedition staff with prior experience is best to assure project success.

All equipment needed for this project (phytoplankton net, filtering device, etc) is provided by Allison.

#### **Expected results/feedback**

The collected samples will contribute to the PhD projects of two graduate students investigating how glacial meltwater influences phytoplankton communities along the Antarctic Peninsula. Researchers will process the data and send updates and results to the expedition staff/participating company prior to each subsequent season. Guests can also follow blog posts and updates on <a href="https://www.fjordphyto.org">www.fjordphyto.org</a> and on social media <a href="https://giordphyto.org">@fjordphyto</a>.

#### Resource material

Detailed project instructions, data sheets as well as on board presentation materials will be provided by Allison.

### Scientific project partners

The data and samples are sent to FjordPhyto scientists in the Vernet Lab at Scripps Institution of Oceanography, University of California San Diego for analysis.

FjordPhyto is sponsored by the National Science Foundation, Scripps Institution of Oceanography Mullin Fellowship, and generous donors.

#### Main contact information

The lead scientist for FjordPhyto is Allison Cusick, allisonlee9@gmail.com

Maria Vernet, Principal Investigator, mvernet@ucsd.edu

#### **Social Media:**

@FjordPhyto (Twitter, Facebook, Instagram) www.facebook.com/fjordphyto www.instagram.com/fjordphyto www.twitter.com/fjordphyto

Donation page: https://crowdsurf.ucsd.edu/fjordphyto



